

MST-0422

MWA analogue signal conditioning module

Test: Characterisation test

Note: only for pre-production units or samples

Serial number: 001

Tester: Julian Schneider

Date: 17 Dec 2010

Test the following properties

1. Observe output on Spectrum Analyser 50MHz to 400MHz. Apply 10MHz to 1GHz noise source (use PSI's noise source – NC3208 Noise SRC, use Minicircuits ZFL-2500 AMP No Pads 1.2GHz filter) to input of each channel in turn. Use ~~50 Ω coaxial attenuators to set input power level to xx dBm.~~ Look for spurious signals on output while changing on-board attenuation.
- no spurious signals
2. Noise floor with 75 Ω terminated input, minimum attenuation. Observe using spectrum analyzer between 50MHz and 400MHz on each channel. Record spot frequency values at 50MHz, 100MHz, 150MHz, 200MHz, 250MHz & 300MHz and note any atypical results over the span.
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3. Channel isolation. Use VNA to measure adjacent channel isolation 50MHz to 400MHz and record plots.
> 130dB for each channel combination
4. Use VNA to measure P1dB point on each channel at 150MHz.
 - **Channel 1: 24.2dB**
 - **Channel 2: 24.3dB**
 - **Channel 3: 24.5dB**
 - **Channel 4: 24.4dB**
 - **Channel 5: 24.2dB**
 - **Channel 6: 24.4dB**
 - **Channel 7: 24.5dB**
 - **Channel 8: 24.3dB**

Comments

This is a one-off test, not for production runs.

MWA ASC Module**Test: Characterisation Test**

Serial number: 001
Tester: Julian Schneider
Date: 16 Dec 2010

		Gain in dBm and Noise in dBm / Hertz @					
Channel	dB @ 230Mhz	80MHz	100MHz	150MHz	200MHz	250MHz	290MHz
1	33.20	-85.35	-84.51	-82.75	-83.98	-83.63	-85.05
		5.45	6.29	8.05	6.82	7.17	5.75
2	33.74	-83.22	-83.33	-82.52	-83.78	-83.64	-84.45
		7.04	6.93	7.74	6.48	6.62	5.81
3	34.07	-82.36	-83.16	-83.03	-82.46	-82.71	-83.72
		7.57	6.77	6.90	7.47	7.22	6.21
4	33.83	-83.31	-84.12	-82.60	-83.69	-84.17	-85.60
		6.86	6.05	7.57	6.48	6.00	4.57
5	33.51	-84.36	-84.61	-83.22	-83.72	-83.44	-85.01
		6.13	5.88	7.27	6.77	7.05	5.48
6	33.60	-84.46	-83.44	-83.17	-83.10	-84.14	-86.11
		5.94	6.96	7.23	7.30	6.26	4.29
7	34.10	-84.18	-83.31	-83.16	-83.97	-84.01	-85.46
		5.72	6.59	6.74	5.93	5.89	4.44
8	33.81	-84.91	-83.75	-84.05	-84.72	-83.72	-85.49
		5.28	6.44	6.14	5.47	6.47	4.70